Remarks

The Office Communication of May 15, 2003 and the Office Action of November 8, 2002, have been carefully considered. Reconsideration of this application, as amended, is respectfully requested. Applicant acknowledges that the specification required correction, and the applicant has amended the specification accordingly.

Claims 1-10 stand rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicant has amended the claims to remove any indefiniteness therein.

Claims 1, 2, 6-8, and 10 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Ojima et al. (5,519,472) in view of Yamashita (4,597,661). Claim 3 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Ojima et al. in view of Yamashita, and in further view of Hirata et al. (5,532,804). Claim 4 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Ojima et al. in view of Yamashita and Hirata et al., and further in view of Tajima et al. (4,936,249). Claim 5 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Ojima et al. in view of Yamashita, and further in view of Hosono et al. (Re. 34, 724).

Ojima et al. teaches a developing apparatus includes a developer carrying member for carrying developer, an elastic blade press-contacted to the developer carrying member to regulate a layer of developer fromed on the developer carrying member, where the elastic blade comprises an electrically conductive layer, and a high resistance layer located at the developer carrying member side of the conductive layer, and an electric field generating device for forming an oscillating electric field between the developer carrying member and the conductive layer, wherein a maximum intensity of the electric field is not

less than 10^6 V/m. Ojima et al. does not teach a plurality of trim bars positioned about a donor roll at a predefined position and spacing around said donor roll, each of said plurality of trim bars including a vibrating member for disrupting a developer bed and reducing developer bed height of said developer material on said donor member to a predefined developer bed height within a development nip. In regard to new claim 12 there is no teaching of said vibrating member comprising a piezoelectric element.

Yamashita teaches a magnet roll assembly for use in an apparatus developing an electrostatic latent image has a permanent magnet providing a plurality of circumferentially spaced magnetic poles and a non-magnetic sleeve surrounding the permanent magnet member, the non-magnetic sleeve having a roughened surface region terminating at both ends inward relative to both ends of the permanent magnet member, a distance which can be proportional to the pitch of the magnetic poles at the sleeve surface whereby a magnetic developer layer of substantially uniform height is formed along the length of the sleeve surface. The surface roughness of the roughned (sic) surface region of the sleeve lies preferably within the range of from 0.5 μm to 3 μm (Rz). The magnet roll assembly is applicable to both magnetic brush-type and jumping-type developing apparatuses. Yamashita does not teach a plurality of trim bars positioned about a donor roll at a predefined position and spacing around said donor roll, each of said plurality of trim bars including a vibrating member for disrupting a developer bed and reducing developer bed height of said developer material on said donor member to a predefined developer bed height within a development nip. In regard to new claim 12 there is no teaching of said vibrating member comprises a piezoelectric element.

Hirata et al. teaches a developing device, which has a developer carrying member forming a magnetic brush of a two-component developer and is capable of carrying out a development while it is not in contact with an

electrostatic latent image retaining member, is improved so as to reproduce an image at a sufficient image density. Hirata et al. does not teach a plurality of trim bars positioned about a donor roll at a predefined position and spacing around said donor roll, each of said plurality of trim bars including a vibrating member for disrupting a developer bed and reducing developer bed height of said developer material on said donor member to a predefined developer bed height within a development nip. In regard to new claim 12 there is no teaching of said vibrating member comprises a piezoelectric element.

Tajima et al. teaches a developing apparatus including a cylindrical member having an outer diameter of 5-25 mm to carry a developer. In the cylindrical member, there is disposed a stationary magnet having only two magnetic poles adjacent an outer periphery thereof. An elastic member is contacted to said cylindrical member to regulate the thickness of the developer layer. Tajima et al. does not teach a plurality of trim bars positioned about a donor roll at a predefined position and spacing around said donor roll, each of said plurality of trim bars including a vibrating member for disrupting a developer bed and reducing developer bed height of said developer material on said donor member to a predefined developer bed height within a development nip. In regard to new claim 12 there is no teaching of said vibrating member comprises a piezoelectric element.

Hosono et al. teaches a developing device for electrophotography includes a developer supporter faced to an image bearing member with a constant space maintained therebetween at a developing station, a developer supply and an elastic developer limiting member maintained in predetermined pressure contact with the developer supporter between the developer supply and the developing station to limit the thickness of developer supported on the supporter to a value not causing contact of the developer with the non-imaged area on the image bearing member. Hosono et al. does not teach a plurality of

trim bars positioned about a donor roll at a predefined position and spacing around said donor roll, each of said plurality of trim bars including a vibrating member for disrupting a developer bed and reducing developer bed height of said developer material on said donor member to a predefined developer bed height within a development nip. In regard to new claim 12 there is no teaching of said vibrating member comprises a piezoelectric element.

Accordingly, it is respectfully submitted that Ojima et al. Yamashia, Hirata et al., Tajima et al., and Kumasaka et al., singly, or in combination, do not teach or suggest a plurality of trim bars positioned about a donor roll at a predefined position and spacing around said donor roll, each of said plurality of trim bars including a vibrating member for disrupting a developer bed and reducing developer bed height of said developer material on said donor member to a predefined developer bed height within a development nip. In regard to new claim 12 there is no teaching of said vibrating member comprises a piezoelectric element.

In view of the foregoing remarks and amendments, reconsideration of this application and allowance thereof are earnestly solicited.

No additional fee is believed to be required for this amendment. However, the undersigned Xerox Corporation attorney (or agent) hereby authorizes the charging of any necessary fees, other than the issue fee, to Xerox Corporation Deposit Account No. 24-0025. This also constitutes a request for any needed extension of time and authorization to charge all fees therefor to Xerox Corporation Deposit Account No. 24-0025.

In the event the Examiner considers personal contact advantageous to the disposition of this case, the Examiner is hereby directed to call applicant's attorney, Lloyd F. Bean, II, at Telephone Number (585)423-4520, Rochester, New York.

Respectfully submitted,

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Application No. 09/995,655

VERSION WITH MARKINGS TO SHOW CHANGES MADE:

IN THE SPECIFICATION:

Amended the paragraph on page 1, lines 5-20 as follows:

Cross reference is made to the following applications filed concurrently herewith: U.S. Patent Application Serial No. ~~(not yet assigned; Attorney Docket No.: D/A0735)~~09/995,670, entitled "Apparatus and Method for Non-Interactive Magnetic Brush Development," by Robert J. Meyer et al.; U.S. Patent Application Serial No. ~~(not yet assigned, Attorney Docket No. D/A0735Q1)~~09/995,654, entitled "Apparatus and Method for Non-Interactive Magnetic Brush Development," by Robert J. Meyer et al.; U.S. Patent Application Serial No. ~~(not yet assigned, Attorney Docket No. D/A0735Q2)~~09/995,628, entitled "Developer Composition for Non-Interactive Magnetic Brush Development," by Robert J. Meyer et al.; U.S. Patent Application Serial No. ~~(not yet assigned, Attorney Docket No. D/A0735Q3)~~09/995,658, entitled "Developer Composition for Non-Interactive Magnetic Brush Development," by Robert J. Meyer et al.; U.S. Patent Application Serial No. ~~(not yet assigned, Attorney Docket No. D/A0735Q4)~~09/995,632, entitled "Developer Composition for Non-Interactive Magnetic Brush Development," by Robert J. Meyer et al., the disclosure(s) of which are totally incorporated herein.

Amended paragraph beginning on page 24, line 18 to page 25, line 6 as follows:

For example, a ferromagnetic core material having a high κ_m ~~high□□m~~ such as hard magnetic carriers include stontium or barium ferrites in the form MOFe2O3 (where M= Ba or Sr for hard magnetic materials), (for example SrFe12O19). These hard carrier materials can exhibit a coercivity

of 300 gauss or greater with a magnetic moment of order 20 to 100 EMU/gm in an applied field of approximately 1000 gauss at presented at the developer roll surface. Other materials commonly applied to provide hard magnetic properties include the alnico (aluminum-nickel-cobalt) alloys, rare-earth materials such as samarium-cobalt (Sm-Co), neodymium-iron-boron alloys (Nd-Fe-B). Core material having a ~~lower□□m~~ lower κ_m such as copper zinc ferrite (CuZn ferrites) or nickel zinc ferrite (NiZn ferrites) core materials can be applied as soft magnetic carriers. Other soft magnetic materials to be considered include nickel-iron alloys, MOFe2O3 (where M=Fe^{2+}, Mn^{2+}, Ni^{2+}, or Zn^{2+} for soft magnetic materials), and iron-silicon alloys. Many of these materials may be readily blended and/or alloyed to provide intermediate magnetic properties. Applied pre-magnetizing fields can also be varied to render the carrier core materials to provide different properties in the magnetic field presented by the developer roll magnetics.

Amended the abstract as follows:

In a development system there is provided a developer transport adapted for depositing developer material on an imaging surface having an electrostatic latent image thereon, including: a housing defining a chamber storing a supply of developer material comprising carrier and toner; a donor member, mounted partially in the chamber and spaced from the imaging surface, for transporting developer on an outer surface thereof to a region opposed from the imaging surface, the donor member having a magnetic assembly having a plurality of poles, a sleeve, enclosing the magnetic assembly, rotating about said magnetic assembly; a trim ~~bars~~ bar positioned about the donor roll at a predefined position and spacing around the donor roll, the trim bar including a vibrating member for disrupting the developer bed and reducing developer bed height of the developer material on the donor

member to a ~~predefine~~ predefined developer bed height within the development nip.

IN THE CLAIMS:

1. (Amended) In a development system including a developer transport adapted for depositing developer material on an imaging surface having an electrostatic latent image thereon, comprising:

a housing defining a chamber storing a supply of developer material comprising carrier and toner;

a donor member, mounted partially in said chamber and spaced from the imaging surface, for transporting developer on an outer surface thereof to a region opposed from the imaging surface, said donor member having a magnetic assembly having a plurality of poles, a sleeve, enclosing said magnetic assembly, rotating about said magnetic assembly;

a plurality of trim ~~bars~~ bars positioned about ~~said~~ a donor roll at a predefined position and spacing around said donor roll, ~~said~~ aeach of said plurality of trim bars including a vibrating member for disrupting ~~the~~ a developer bed and reducing developer bed height of said developer material on said donor member to a predefine developer bed height within ~~the~~ a development nip.

5. (Amended) The development system of **claim 1**, wherein each of said plurality of trim bars comprised of a shaped metal blade fastened to the wall of the development housing. ~~These trim bars may be attached to or comprised of a piezoelectric vibrator which can be electrically driven with a high frequency driving power source, oscillating at between 1 and 100 KHz to impart vibrational energy.~~

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6. (Amended) The development system of **claim 1**, wherein said predefine developer bed height is between five and twenty carrier ~~bead~~ of the carrier diameters~~s~~, with a preferred value being at ten carrier bead diameters. ~~Presently, carrier bead size ranges from 30 microns to 50 microns. In the past, carrier bead sizes up to 80 microns have been used.~~

Claim 9 has been cancelled.

Claims 11 and 12 are new claims.

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